

## WAAVP guidelines for faecal egg count reduction tests (FECRT)

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**Background:** WAAVP guidelines for FECRT were provided in the 90's (Coles et al, 1992, Vet. Parasitol. 44, 35-44). Issues that have been investigated since then include (1) the efficacy formula used and the type of mean, (2) the detection limit of the FEC methods, (3) low and aggregated FEC, (4) small group sizes, (5) inclusion of an untreated control group verses pre- and post-treatment counts of the same group, (6) drug administration formulations, (7) the calculation of confidence intervals and (8) the criteria to define reduced efficacy. Therefore, it has been suggested that an update of the current guidelines is warranted to improve the interpretation of FECRT.

**Methods:** Review of the relevant literature and computer simulation studies. The impact of the above issues on the detection of a truly reduced efficacy was assessed from previous and ongoing studies.

**Results:** Correct assessment of efficacy from a FECRT is affected by a complex interplay of factors inherent to both the study design (sample size and detection limit of the FEC method) parasite and/or host (level of excretion and aggregation of FEC). Moreover, it suggests that a common approach for performing FECRT over different parasite and host species is not desirable. There is a large variation in both the level of egg excretion and aggregation caused by factors inherent to different parasite and/or host species, demanding a different sample size or detection limit. For some host species pre- and post-treatment egg counts of the same animals are necessary for improved precision while for others the less expensive post-treatment egg counts of control and treated animals is adequate.

**Conclusion/Summary:** Current guidelines recommend a standard approach which inadequately considers host- and parasite-specific factors, leading in several cases to suboptimal designs resulting in inefficient usage of available resources or inconclusive results.

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